Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657

NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX **El Paso:** T104704221-08-TX **Midland:** T104704392-08-TX

LELAP-02003 LELAP-02002

Kansas E-10317

Analytical and Quality Control Report

Jennifer Davis WTS Building 126 3RD Floor P.O. Box 363 WSMR, NM, 88002

Report Date: October 7, 2008

Work Order: 8080828

Project Name: HELSTF GROUNDWATER

Project Number: 65

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	111116	Date
\mathbf{Sample}	Description	Matrix	Taken	Taken	$\operatorname{Received}$
170067	HLSF-0085-HMW-014-0808	water	2008-08-06	14:15	2008-08-06
170168	HLSF-0085-HMW-055-0808	water	2008-08-08	13:16	2008-08-08
170170	HLSF-0085-HMW-010-0808	water	2008-08-07	10:20	2008-08-07
170455	HLSF-0085-HMW-054-0808	water	2008-08-11	10:08	2008-08-11
170457	HLSF-0085-D RW-008-0808	water	2008-08-11	12:55	2008-08-11
170843	HLSF-0085-HMW-043-0808	water	2008-08-13	09:45	2008-08-13
170986	HLSF-0085-DRW-017-0808	water	2008-08-14	10:30	2008-08-14
171111	HLSF-0085-HMW-062-0808	water	2008-08-18	14:00	2008-08-18
171300	HLSF-0085-HMW-008-0808	water	2008-08-19	10:48	2008-08-19
171303	HLSF-0085-HMW-034-0808	water	2008-08-19	12:46	2008-08-19
171731	HLSF-0085-HMW-033-0808	water	2008-08-21	09:42	2008-08-21
171733	HLSF-0085-HMW-059-0808	water	2008-08-21	11:45	2008-08-21
171735	HLSF-0085-DRW-016-0808	water	2008-08-22	10.25	2008-08-22
172137	HLSF-0085-DRW-114-0808	water	2008-08-27	13:35	2008-08-27
172139	HLSF-0085-DRW-014-0808	water	2008-08-27	13:35	2008-08-27

			\mathbf{Date}	Time	Date
Sample	Description	Matrix	Taken	Taken	$\operatorname{Received}$
172467	HLSF-0085-HMW-053-0808	water	2008-08-28	12:20	2008-08-28
172638	HLSF-0085-HMW-061-0908	water	2008-09-02	10:25	2008-09-02
172640	HLSF-0085-HMW-060-0908	water	2008-09-02	13:15	2008-09-02
172795	HLSF-0085-HMW-063-0908	water	2008-09-03	12:50	2008-09-03
172797	HLSF-0085-HMW-058-0908	water	2008-09-03	10:10	2008-09-05
172908	HLSF-0085-HMW-057-0908	water	2008-09-04	11:15	2008-09-04
172910	HLSF-0085-DRW-002-0908	water	2008-09-04	13:41	2008-09-04
173041	HLSF-0085-RB-001-0908	water	2008-09-08	15:30	2008-09-09
173043	HLSF-0085-HCF-003-0908	water	2008-09-08	12:00	2008-09-08
173045	HLSF-0085-HCF-103-0908	water	2008-09-08	12:00	2008-09-08

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 28 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael april

Dr. Blair Leftwich, Director

Standard Flags

 $\boldsymbol{B}\,$ - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project HELSTF GROUNDWATER, HELSTF GROUND-WATER, HELSTF GROUNDWATER, HELSTF GROUNDWATER, HELSTF GROUNDWA-TER, HELSTF GROUNDWATER, HELSTF STF GROUNDWATER, HELSTF GROUNDWATER, HELSTF GROUNDWATER, HELSTF GROUNDWATER and HEL-STF GROUNDWATER were received by TraceAnalysis, Inc. on 2008-08-06, 2008-08-08, 2008-08-07, 2008-08-11, 2008-08-11, 2008-08-13, 2008-08-14, 2008-08-18, 2008-08-19, 2008-08-19, 2008-08-21, 2008-08-21, 2008-08-22, 2008-08-27, 2008-08-27, 2008-08-29, 2008-08-28, 2008-09-02, 2008-09-02, 2008-09-03, 2008-09-05, 2008-09-04, 2008-09-04, 2008-09-09, 2008-09-08 and 2008-09-08 and assigned to work orders 8080828, 8081109, 8081110, 8081318, 8081319, 8081533, 8081820, 8082006, 8082103, 8082105, $8082517,\ 8082518,\ 8082519,\ 8082824,\ 8082825,\ 8090219,\ 8090411,\ 8090412,\ 8090519,\ 8090520,\ 8090810,\ 8090811,\ 8091019,$ 8091020 and 8091021 respectively. Samples for work order 8080828 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8081109 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8081110 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8081318 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8081319 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8081533 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8081820 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8082006 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8082103 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8082105 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8082517 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8082518 were received intact without headspace and at a temperature of 4.0 deg C.Samples for work order 8082519 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8082824 were received intact without headspace and at a temperature of 4.0 dec C.Samples for work order 8082825 were received intact without headspace and at a temperature of 4.0 dec C.Samples for work order 8090219 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8090411 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8090412 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8090519 were received intact without headspace and at a temperature of 4.0 dec C.Samples for work order 8090520 were received intact without headspace and at a temperature of 4.0 deg.C.Samples for work order 8090810 were received intact without headspace and at a temperature of 4.0 dec C.Samples for work order 8090811 were received intact without headspace and at a temperature of 4.0 dec C.Samples for work order 8091019 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8091020 were received intact without headspace and at a temperature of 4.0 deg. C.Samples for work order 8091021 were received intact without headspace and at a temperature of 4.0 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
TPH GRO	S 8015B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work orders 8080828, 8081109, 8081110, 8081318, 8081319, 8081533, 8081820, 8082006, 8082103, 8082105, 8082517, 8082518,

8082519, 8082824, 8082825, 8090219, 8090411, 8090412, 8090519, 8090520, 8090810, 8090811, 8091019, 8091020 and 8091021 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 170067 - HLSF-0085-HMW-014-0808

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S 8015B QC Batch: 51330 Date Analyzed: 2008-08-11 Prep Batch: 44019 Sample Preparation: 2008-08-11

Prep Method: S 5030B Analyzed By: MT Prepared By: MT

S 5030B

MT

MT

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RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		< 0.100	m mg/L	1	0.100

					Spike	$\operatorname{Percent}$	Recovery
$\mathbf{Surrogate}$	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0950	$\mathrm{mg/L}$	1	0.100	95	74.5 - 111
4-Bromofluorobenzene (4-BFB)		0.0959	$\mathrm{mg/L}$	1	0.100	96	61.7 - 115.8

Sample: 170168 - HLSF-0085-HMW-055-0808

Laboratory: Lubbock

Analysis:TPH GROAnalytical Method:S 8015BPrep Method:QC Batch:51330Date Analyzed:2008-08-11Analyzed By:Prep Batch:44019Sample Preparation:2008-08-11Prepared By:

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	$\operatorname{Dilution}$	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0935	$\mathrm{mg/L}$	1	0.100	94	74.5 - 111
4-Bromofluorobenzene (4-BFB)		0.0950	$\mathrm{mg/L}$	1	0.100	95	61.7 - 115.8

Sample: 170170 - HLSF-0085-HMW-010-0808

Laboratory: Lubbock Analysis: TPH GRO Analy

Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5030B QC Batch: 51330 Date Analyzed: 2008-08-11 Analyzed By: MT Prep Batch: 44019 Sample Preparation: 2008-08-11 Prepared By: MT

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		< 0.100	m mg/L	1	0.100

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					Spike	Percent	Recovery
Surrogate	Flag	Result	${ m Units}$	$\operatorname{Dilution}$	${f Amount}$	$\operatorname{Recovery}$	Limits
Trifluorotoluene (TFT)		0.0920	$\mathrm{mg/L}$	1	0.100	92	74.5 - 111
4-Bromofluorobenzene (4-BFB)		0.0907	$\mathrm{mg/L}$	1	0.100	91	61.7 - 115.8

Sample: 170455 - HLSF-0085-HMW-054-0808

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S 8015BPrep Method: S 5030BQC Batch: 51490 Date Analyzed: 2008-08-15 Analyzed By: ERPrep Batch: Sample Preparation: 2008-08-15 Prepared By: ER44146

					Spike	$\operatorname{Percent}$	Recovery
$\mathbf{Surrogate}$	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0920	$\mathrm{mg/L}$	1	0.100	92	74.5 - 111
4-Bromofluorobenzene (4-BFB)		0.0976	$\mathrm{mg/L}$	1	0.100	98	61.7 - 115.8

Sample: 170457 - HLSF-0085-D RW-008-0808

Laboratory: Lubbock

TPH GRO Analysis: Analytical Method: S 8015BPrep Method: S_{5030B} QC Batch: 51490 Date Analyzed: 2008-08-15 Analyzed By: ERPrep Batch: 44146 Sample Preparation: 2008-08-15 Prepared By: ER

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
$\mathbf{Surrogate}$	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0918	$\mathrm{mg/L}$	1	0.100	92	74.5 - 111
4-Bromofluorobenzene (4-BFB)		0.0974	${ m mg/L}$	1	0.100	97	61.7 - 115.8

Sample: 170843 - HLSF-0085-HMW-043-0808

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S 8015BPrep Method: S_{5030B} QC Batch: 51490 Date Analyzed: 2008-08-15 Analyzed By: ERPrep Batch: 44146 Sample Preparation: 2008-08-15 Prepared By: ER

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S 5030B

MT

MT

	Flag	Result		Units	I	Dilution	RL
GRO		< 0.100		mg/L		1	0.100
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	$\operatorname{Dilution}$	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0894	mg/L	1	0.100	89	74.5 - 111
4-Bromofluorobenzene (4-I	BFB)	0.0949	$\mathrm{mg/L}$	1	0.100	95	61.7 - 115.8

Lubbock Laboratory:

Analytical Method: Prep Method: Analysis: TPH GRO S 8015B QC Batch: 51709 Date Analyzed: 2008-08-22 Analyzed By: Prep Batch: 44336Sample Preparation: 2008-08-22 Prepared By:

RLParameter Flag Result Units Dilution RLGRO < 0.100 0.100 mg/L

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)	1	0.0792	$\mathrm{mg/L}$	1	0.100	79	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0651	${ m mg/L}$	1	0.100	65	51.3 - 116.6

Sample: 171111 - HLSF-0085-HMW-062-0808

Laboratory: Lubbock

S 8015B Analysis: TPH GRO Analytical Method: Prep Method: S 5030B QC Batch: 51709 Date Analyzed: 2008-08-22 Analyzed By: MTPrep Batch: 44336Sample Preparation: 2008-08-22 Prepared By: MT

RLParameter Flag Dilution Result Units RLGRO < 0.100mg/L0.100

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.105	$\mathrm{mg/L}$	1	0.100	105	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0866	${ m mg/L}$	1	0.100	87	51.3 - 116.6

¹TFT surrogate recovery outside normal limits. BFB surrogate recovery shows the method to be in control.

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Sample: 171300 - HLSF-0085-HMW-008-0808

Laboratory: Lubbock

S 5030BAnalysis: TPH GRO Analytical Method: Prep Method: S 8015B QC Batch: 51709 Date Analyzed: 2008-08-22 Analyzed By: MTPrep Batch: 44336Sample Preparation: 2008-08-22 Prepared By: MT

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		< 0.100	m mg/L	1	0.100

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.108	$\mathrm{mg/L}$	1	0.100	108	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0878	$\mathrm{mg/L}$	1	0.100	88	51.3 - 116.6

Sample: 171303 - HLSF-0085-HMW-034-0808

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S 8015BPrep Method: S_{5030B} QC Batch: 51709 Date Analyzed: 2008-08-22 Analyzed By: MTSample Preparation: Prep Batch: 443362008-08-22 Prepared By: MT

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		< 0.100	m mg/L	1	0.100

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
$\mathbf{Surrogate}$	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.106	$\mathrm{mg/L}$	1	0.100	106	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0847	$\mathrm{mg/L}$	1	0.100	85	51.3 - 116.6

Sample: 171731 - HLSF-0085-HMW-033-0808

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S_{5030B} S 8015B Prep Method: QC Batch: 51757Date Analyzed: 2008-08-25Analyzed By: MTPrep Batch: Sample Preparation: 2008-08-25 Prepared By: MT44384

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Surrogate	Flag	Result	${ m Units}$	Dilution	$egin{array}{c} ext{Spike} \ ext{Amount} \end{array}$	Percent Recovery	$egin{array}{c} ext{Recovery} \ ext{Limits} \end{array}$
Trifluorotoluene (TFT)		0.107	mg/L	1	0.100	107	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0852	${ m mg/L}$	1	0.100	85	51.3 - 116.6

Sample: 171733 - HLSF-0085-HMW-059-0808

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S 8015BPrep Method: S 5030BQC Batch: 51757 Date Analyzed: 2008-08-25 Analyzed By: MTPrep Batch: Sample Preparation: 2008-08-25 Prepared By: MT44384

RL

Parameter	Flag	Result	Units	${\bf Dilution}$	RL
GRO		< 0.100	m mg/L	1	0.100

					${ m Spike}$	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	$\operatorname{Dilution}$	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.106	$\mathrm{mg/L}$	1	0.100	106	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0852	$\mathrm{mg/L}$	1	0.100	85	51.3 - 116.6

Sample: 171735 - HLSF-0085-DRW-016-0808

Laboratory: Lubbock

TPH GRO Analysis: Analytical Method: S 8015B Prep Method: S 5030B QC Batch: 51757Date Analyzed: 2008-08-25 Analyzed By: MTSample Preparation: 2008-08-25 Prep Batch: 44384Prepared By: MT

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
$\mathbf{Surrogate}$	Flag	Result	Units	$\operatorname{Dilution}$	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.111	$\mathrm{mg/L}$	1	0.100	111	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0859	${ m mg/L}$	1	0.100	86	51.3 - 116.6

Sample: 172137 - HLSF-0085-DRW-114-0808

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S 8015BPrep Method: S_{5030B} QC Batch: 51916 Date Analyzed: 2008-08-29 Analyzed By: ERPrep Batch: Sample Preparation: 2008-08-29 Prepared By: ER44521

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			RL					
Parameter	Flag		Result		Units]	Dilution	RL
GRO			< 0.100		${ m mg/L}$		1	0.100
						Spike	Percent	Recovery
Surrogate		Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)			0.120	mg/L	1	0.100	120	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0823	$\mathrm{mg/L}$	1	0.100	82	51.3 - 116.6

Sample: 172139 - HLSF-0085-DRW-014-0808

Lubbock Laboratory:

Analytical Method: Prep Method: S 5030B Analysis: TPH GRO S 8015B QC Batch: 51916 Date Analyzed: 2008-08-29 Analyzed By: ERPrep Batch: 44521Sample Preparation: 2008-08-29 Prepared By: ER

RLParameter Flag Result Units Dilution RLGRO < 0.100 0.100 mg/L

					$_{ m Spike}$	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	$\operatorname{Dilution}$	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.119	mg/L	1	0.100	119	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0803	${ m mg/L}$	1	0.100	80	51.3 - 116.6

Sample: 172467 - HLSF-0085-HMW-053-0808

Laboratory: Lubbock

S 8015B Analysis: TPH GRO Analytical Method: Prep Method: S 5030B QC Batch: 52021 Date Analyzed: 2008-09-03 Analyzed By: ERPrep Batch: 44599Sample Preparation: 2008-09-03 Prepared By: ER

RLParameter Dilution Flag Result Units RL< 0.500 GRO mg/L0.100

					Spike	$\operatorname{Percent}$	Recovery
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.464	$\mathrm{mg/L}$	5	0.500	93	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.431	${ m mg/L}$	5	0.500	86	51.3 - 116.6

²Sample ran at a dilution due to limited amount of sample.

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Sample: 172638 - HLSF-0085-HMW-061-0908

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: Prep Method: S_{5030B} S 8015B QC Batch: 52076 Date Analyzed: 2008-09-04 Analyzed By: ERPrep Batch: 44648Sample Preparation: 2008-09-04 Prepared By: ER

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		< 0.100	m mg/L	1	0.100

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
$\mathbf{Surrogate}$	Flag	Result	Units	$\operatorname{Dilution}$	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.105	$\mathrm{mg/L}$	1	0.100	105	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0861	$\mathrm{mg/L}$	1	0.100	86	51.3 - 116.6

Sample: 172640 - HLSF-0085-HMW-060-0908

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S 8015BPrep Method: S_{5030B} QC Batch: 52076 Date Analyzed: 2008-09-04 Analyzed By: ERSample Preparation: 2008-09-04 Prep Batch: 44648Prepared By: ER

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		< 0.100	$\mathrm{mg/L}$	1	0.100

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
$\mathbf{Surrogate}$	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0969	$\mathrm{mg/L}$	1	0.100	97	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0863	${ m mg/L}$	1	0.100	86	51.3 - 116.6

Sample: 172795 - HLSF-0085-HMW-063-0908

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S_{5030B} S 8015B Prep Method: QC Batch: 52195 Date Analyzed: 2008-09-09 Analyzed By: MTPrep Batch: Sample Preparation: 2008-09-09 Prepared By: MT44755

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Surrogate	Flag	Result	Units	$\operatorname{Dilution}$	$egin{array}{c} ext{Spike} \ ext{Amount} \end{array}$	Percent Recovery	$egin{array}{c} { m Recovery} \\ { m Limits} \end{array}$
Trifluorotoluene (TFT)		0.105	mg/L	1	0.100	105	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0877	${ m mg/L}$	1	0.100	88	51.3 - 116.6

Sample: 172797 - HLSF-0085-HMW-058-0908

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5030BQC Batch: 52195 Date Analyzed: 2008-09-09 Analyzed By: MTPrep Batch: 44755Sample Preparation: 2008-09-09 Prepared By: MT

RL

				C:1 D	D
GRO		< 0.100	m mg/L	1	0.100
Parameter	Flag	Result	Units	Dilution	RL

					Sріке	Percent	Recovery
Surrogate	Flag	Result	Units	$\operatorname{Dilution}$	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0979	$\mathrm{mg/L}$	1	0.100	98	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0854	${ m mg/L}$	1	0.100	85	51.3 - 116.6

Sample: 172908 - HLSF-0085-HMW-057-0908

Laboratory: Lubbock

TPH GRO Analysis: Analytical Method: S 8015B Prep Method: S 5030B QC Batch: 52195Date Analyzed: 2008-09-09 Analyzed By: MTSample Preparation: 2008-09-09 Prep Batch: 44755Prepared By: MT

RLResult Units Dilution Parameter Flag RL $\overline{\text{GRO}}$ < 0.100 mg/L0.100

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
$\mathbf{Surrogate}$	Flag	Result	Units	$\operatorname{Dilution}$	${ m Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.100	${ m mg/L}$	1	0.100	100	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0879	$\mathrm{mg/L}$	1	0.100	88	51.3 - 116.6

Sample: 172910 - HLSF-0085-DRW-002-0908

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S 8015BPrep Method: S_{5030B} QC Batch: 52293 Date Analyzed: 2008-09-11 Analyzed By: ERPrep Batch: 44826 Sample Preparation: 2008-09-11 Prepared By: ER

		RL					
Parameter Fla	$_{ m ag}$	Result		Units		Dilution	RL
GRO		1.13		m mg/L		1	0.100
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0868	m mg/L	1	0.100	87	79.4 - 122.7
4-Bromofluorobenzene (4-BFI	3)	0.121	m mg/L	1	0.100	121	51.3 - 116.6

Sample: 173041 - HLSF-0085-RB-001-0908

Lubbock Laboratory:

Analysis: TPH GRO QC Batch: 52293 Prep Batch: 44826

Analytical Method: S 5030B S 8015B Prep Method: Date Analyzed: Analyzed By: 2008-09-11 ERSample Preparation: 2008-09-11 Prepared By: ER

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RLParameter Flag Result Units Dilution RLGRO < 0.500 0.100 mg/L5

					$_{ m Spike}$	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.591	mg/L	5	0.500	118	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.467	$\mathrm{mg/L}$	5	0.500	93	51.3 - 116.6

Sample: 173043 - HLSF-0085-HCF-003-0908

Laboratory: Lubbock

S 8015B Analysis: TPH GRO Analytical Method: Prep Method: S 5030BQC Batch: 52293 Date Analyzed: 2008-09-11 Analyzed By: ERPrep Batch: 44826Sample Preparation: 2008-09-11 Prepared By: ER

RLParameter Result Dilution Flag Units RL0.670GRO mg/L0.100

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
$\mathbf{Surrogate}$	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0990	$\mathrm{mg/L}$	1	0.100	99	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)	5	0.119	${ m mg/L}$	1	0.100	119	51.3 - 116.6

³ High surrogate recovery due to peak interference.

⁴Sample ran at dilution due to lack of sample. •

⁵ High surrogate recovery due to peak interference.

Sample: 173045 - HLSF-0085-HCF-103-0908

Laboratory: Lubbock

Analysis: TPH GRO Analytical Method: S 8015B QC Batch: 52293 Date Analyzed: 2008-09-11 Prep Batch: 44826Sample Preparation: 2008-09-11 Prep Method: S 5030B Analyzed By: ERPrepared By: ER

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RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		0.913	m mg/L	1	0.100

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	$\operatorname{Dilution}$	${ m Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.101	$\mathrm{mg/L}$	1	0.100	101	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)	6	0.138	$\mathrm{mg/L}$	1	0.100	138	51.3 - 116.6

Method Blank (1) QC Batch: 51330

QC Batch: 51330 Prep Batch: 44019

Date Analyzed: 2008-08-11 QC Preparation: 2008-08-11 Analyzed By: MT Prepared By: MT

MDL

Parameter	Flag	Result	Units	RL
GRO		< 0.0231	m mg/L	0.1

					${ m Spike}$	$\operatorname{Percent}$	$\operatorname{Recovery}$
$\mathbf{Surrogate}$	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0873	$\mathrm{mg/L}$	1	0.100	87	74.5 - 111
4-Bromofluorobenzene (4-BFB)		0.0885	$\mathrm{mg/L}$	1	0.100	88	61.7 - 115.8

Method Blank (1) QC Batch: 51490

QC Batch: 51490Prep Batch: 44146

Date Analyzed: 2008-08-15QC Preparation: 2008-08-15 Analyzed By: ERPrepared By: ER

MDL

Parameter Flag Result Units RL $\overline{\text{GRO}}$ < 0.0231 mg/L0.1

					${ m Spike}$	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0858	$\mathrm{mg/L}$	1	0.100	86	74.5 - 111
4-Bromofluorobenzene (4-BFB)		0.0892	$\mathrm{mg/L}$	1	0.100	89	61.7 - 115.8

⁶ High surrogate recovery due to peak interference.

Report Date: October 7, 2008

 $\begin{array}{c} {\rm Work~Order:~8080828} \\ {\rm HELSTF~GROUNDWATER} \end{array}$

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Method Blank (1)

QC Batch: 51709

QC Batch: 51709 Prep Batch: 44336 Date Analyzed: 2008-08-22 QC Preparation: 2008-08-22 Analyzed By: MT Prepared By: MT

MDL

					$_{ m Spike}$	$\operatorname{Percent}$	$\operatorname{Recovery}$
$\mathbf{Surrogate}$	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.101	$\mathrm{mg/L}$	1	0.100	101	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0821	m mg/L	1	0.100	82	51.3 - 116.6

Method Blank (1)

QC Batch: 51757

QC Batch: 51757 Prep Batch: 44384 Date Analyzed: 2008-08-25 QC Preparation: 2008-08-25 Analyzed By: MT

Prepared By: MT

 MDL

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.102	$\mathrm{mg/L}$	1	0.100	102	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0810	mg/L	1	0.100	81	51.3 - 116.6

Method Blank (1)

QC Batch: 51916

QC Batch: 51916 Prep Batch: 44521 Date Analyzed: 2008-08-29 QC Preparation: 2008-08-29 Analyzed By: ER Prepared By: ER

MDL

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.108	$\mathrm{mg/L}$	1	0.100	108	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0857	mg/L	1	0.100	86	51.3 - 116.6

Report Date: October 7, 2008

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Method	Blank	(1)	
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QC Batch: 52021

QC Batch: 52021Prep Batch: 44599 Date Analyzed: 2008-09-03 QC Preparation: 2008-09-03 Analyzed By: ERPrepared By: ER

MDL

Parameter Flag Result Units RLGRO < 0.0229 mg/L

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	${\rm Dilution}$	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0906	$\mathrm{mg/L}$	1	0.100	91	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0813	$_{ m mg/L}$	1	0.100	81	51.3 - 116.6

Method Blank (1)

QC Batch: 52076

QC Batch: 52076Prep Batch: 44648 Date Analyzed: 2008-09-04 QC Preparation: 2008-09-04 Analyzed By: ERER

Prepared By:

MDL

Parameter Flag Result Units RLGRO < 0.0229 mg/L

					${ m Spike}$	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	$\operatorname{Dilution}$	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0913	$\mathrm{mg/L}$	1	0.100	91	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0814	$\mathrm{mg/L}$	1	0.100	81	51.3 - 116.6

Method Blank (1)

QC Batch: 52195

QC Batch: 52195Prep Batch: 44755

Date Analyzed: 2008-09-09 QC Preparation: 2008-09-09 Analyzed By: MTPrepared By: MT

MDL

Parameter Flag Result Units RL \overline{GRO} < 0.0229 mg/L

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
Trifluorotoluene (TFT)		0.0970	$\mathrm{mg/L}$	1	0.100	97	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0848	$\mathrm{mg/L}$	1	0.100	85	51.3 - 116.6

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Method Blank (1)

QC Batch: 52293

QC Batch: 52293 Prep Batch: 44826 Date Analyzed: 2008-09-11 QC Preparation: 2008-09-11 Analyzed By: ER Prepared By: ER

MDL

					Spike	Percent	Recovery
$\operatorname{Surrogate}$	Flag	Result	Units	$\operatorname{Dilution}$	${ m Amount}$	$\operatorname{Recovery}$	Limits
Trifluorotoluene (TFT)		0.110	$\mathrm{mg/L}$	1	0.100	110	79.4 - 122.7
4-Bromofluorobenzene (4-BFB)		0.0827	$\mathrm{mg/L}$	1	0.100	83	51.3 - 116.6

Laboratory Control Spike (LCS-1)

QC Batch: 51330 Prep Batch: 44019 Date Analyzed: 2008-08-11 QC Preparation: 2008-08-11 Analyzed By: MT Prepared By: MT

LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit GRO 0.976 1.00 < 0.0231 77.7 - 126.3 mg/L 98

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec .	Limit	RPD	Limit
GRO	0.988	$_{ m mg/L}$	1	1.00	< 0.0231	99	77.7 - 126.3	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	$_{ m LCS}$	LCSD			Spike	LCS	LCSD	$\mathrm{Rec}.$
Surrogate	Result	Result	Units	Dil.	${f Amount}$	Rec .	$\mathrm{Rec}.$	Limit
Trifluorotoluene (TFT)	0.0979	0.100	mg/L	1	0.100	98	100	76.7 - 126
4-Bromofluorobenzene (4-BFB)	0.0993	0.0981	$\mathrm{mg/L}$	1	0.100	99	98	80.5 - 119

Laboratory Control Spike (LCS-1)

QC Batch: 51490 Prep Batch: 44146 Date Analyzed: 2008-08-15 QC Preparation: 2008-08-15 Analyzed By: ER Prepared By: ER

	LCS			Spike	Matrix		$\mathrm{Rec}.$
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec .	Limit
GRO	0.931	$_{ m mg/L}$	1	1.00	< 0.0231	93	77.7 - 126.3

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	LCSD			Spike	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec.	Limit	RPD	Limit
GRO	0.950	$_{ m mg/L}$	1	1.00	< 0.0231	95	77.7 - 126.3	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	$_{ m LCS}$	LCSD			Spike	LCS	LCSD	$\mathrm{Rec}.$
$\mathbf{Surrogate}$	Result	Result	Units	Dil.	${f Amount}$	Rec .	Rec .	Limit
Trifluorotoluene (TFT)	0.0932	0.0985	$\mathrm{mg/L}$	1	0.100	93	98	76.7 - 126
4-Bromofluorobenzene (4-BFB)	0.0952	0.107	mg/L	1	0.100	95	107	80.5 - 119

Laboratory Control Spike (LCS-1)

QC Batch: 51709 Date Analyzed: 2008-08-22 Analyzed By: MT
Prep Batch: 44336 QC Preparation: 2008-08-22 Prepared By: MT

	LCS			Spike	Matrix		$\mathrm{Rec}.$
Param	Result	Units	Dil.	${f Amount}$	Result	Rec .	Limit
GRO	0.961	mg/L	1	1.00	< 0.0229	96	75.6 - 116.1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	$_{ m LCSD}$			Spike	Matrix		Rec .		RPD
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec.	Limit	RPD	Limit
GRO	0.979	${ m mg/L}$	1	1.00	< 0.0229	98	75.6 - 116.1	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	$\mathrm{Rec}.$
$\mathbf{Surrogate}$	Result	Result	Units	Dil.	${f Amount}$	Rec .	Rec .	Limit
Trifluorotoluene (TFT)	0.0946	0.0948	m mg/L	1	0.100	95	95	76.5 - 118.1
4-Bromofluorobenzene (4-BFB)	0.0996	0.0970	${ m mg/L}$	1	0.100	100	97	74.7 - 117

Laboratory Control Spike (LCS-1)

QC Batch: 51757 Date Analyzed: 2008-08-25 Analyzed By: MT
Prep Batch: 44384 QC Preparation: 2008-08-25 Prepared By: MT

	LCS			Spike	Matrix		$\mathrm{Rec}.$
Param	Result	Units	Dil.	${f Amount}$	Result	Rec .	Limit
$\overline{\mathrm{GRO}}$	0.981	${ m mg/L}$	1	1.00	< 0.0229	98	75.6 - 116.1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec .		RPD
Param	Result	Units	Dil.	${f Amount}$	Result	Rec .	Limit	RPD	Limit
GRO	0.966	mg/L	1	1.00	< 0.0229	97	75.6 - 116.1	2	20

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C .	LCS	LCSD	TT 's	D'I	Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	$_{ m Units}$	$\mathrm{Dil}.$	\mathbf{Amount}	Rec .	$\mathrm{Rec}.$	Limit
Trifluorotoluene (TFT)	0.0940	0.0970	$\mathrm{mg/L}$	1	0.100	94	97	76.5 - 118.1
4-Bromofluorobenzene (4-BFB)	0.0999	0.0988	m mg/L	1	0.100	100	99	74.7 - 117

Laboratory Control Spike (LCS-1)

QC Batch: Date Analyzed: Analyzed By: ER 51916 2008-08-29 Prep Batch: 44521 QC Preparation: 2008-08-29 Prepared By: ER

	LCS			Spike	Matrix		$\mathrm{Rec}.$
Param	Result	Units	Dil.	${f Amount}$	Result	$\mathrm{Rec}.$	Limit
GRO	1.06	mg/L	1	1.00	< 0.0229	106	75.6 - 116.1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	$_{ m LCSD}$			Spike	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec.	Limit	RPD	Limit
GRO	0.996	mg/L	1	1.00	< 0.0229	100	75.6 - 116.1	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	$_{ m LCSD}$			Spike	LCS	LCSD	${ m Rec}.$
Surrogate	Result	Result	Units	Dil.	${f Amount}$	Rec .	$\mathrm{Rec}.$	Limit
Trifluorotoluene (TFT)	0.108	0.0989	$\mathrm{mg/L}$	1	0.100	108	99	76.5 - 118.1
4-Bromofluorobenzene (4-BFB)	0.0906	0.0939	$\mathrm{mg/L}$	1	0.100	91	94	74.7 - 117

Laboratory Control Spike (LCS-1)

QC Batch: 52021Date Analyzed: 2008-09-03 Analyzed By: ER Prep Batch: 44599 QC Preparation: 2008-09-03 Prepared By: ER

	LCS			Spike	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	${f Amount}$	Result	Rec .	Limit
GRO	1.02	$_{ m mg/L}$	1	1.00	< 0.0229	102	75.6 - 116.1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec.	Limit	RPD	Limit
GRO	1.08	mg/L	1	1.00	< 0.0229	108	75.6 - 116.1	6	20

	LCS	LCSD			Spike	LCS	LCSD	Rec .
Surrogate	Result	Result	Units	Dil.	${f Amount}$	$\mathrm{Rec}.$	Rec .	Limit
Trifluorotoluene (TFT)	0.103	0.110	$\mathrm{mg/L}$	1	0.100	103	110	76.5 - 118.1
4-Bromofluorobenzene (4-BFB)	0.0992	0.108	$_{ m mg/L}$	1	0.100	99	108	74.7 - 117

Laboratory Control Spike (LCS-1)

QC Batch: 52076 Prep Batch: 44648 Date Analyzed: 2008-09-04 QC Preparation: 2008-09-04 Analyzed By: ER Prepared By: ER

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	LCS			Spike	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	${f Amount}$	Result	Rec .	Limit
GRO	0.895	$\mathrm{mg/L}$	1	1.00	< 0.0229	89	75.6 - 116.1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	$_{ m LCSD}$			Spike	Matrix		Rec .		RPD
Param	Result	Units	Dil.	${f Amount}$	Result	Rec	Limit	RPD	Limit
GRO	0.901	mg/L	1	1.00	< 0.0229	90	75.6 - 116.1	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	Rec .
Surrogate	Result	Result	Units	Dil.	${ m Amount}$	Rec .	Rec .	Limit
Trifluorotoluene (TFT)	0.0902	0.0878	m mg/L	1	0.100	90	88	76.5 - 118.1
4-Bromofluorobenzene (4-BFB)	0.102	0.0994	${ m mg/L}$	1	0.100	102	99	74.7 - 117

Laboratory Control Spike (LCS-1)

QC Batch: 52195 Prep Batch: 44755 Date Analyzed: 2008-09-09 QC Preparation: 2008-09-09 Analyzed By: MT Prepared By: MT

ER

ER

	LCS			Spike	Matrix		$\mathrm{Rec}.$
Param	Result	Units	Dil.	${f Amount}$	Result	Rec .	Limit
GRO	1.01	$\mathrm{mg/L}$	1	1.00	< 0.0229	101	75.6 - 116.1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec .		RPD
Param	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit	RPD	Limit
GRO	1.13	mg/L	1	1.00	< 0.0229	113	75.6 - 116.1	11	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	$_{ m LCS}$	LCSD			$_{ m Spike}$	LCS	LCSD	$\mathrm{Rec.}$
Surrogate	Result	Result	Units	Dil.	${f Amount}$	Rec .	Rec .	Limit
Trifluorotoluene (TFT)	0.103	0.0993	${ m mg/L}$	1	0.100	103	99	76.5 - 118.1
4-Bromofluorobenzene (4-BFB)	0.106	0.0929	m mg/L	1	0.100	106	93	74.7 - 117

Laboratory Control Spike (LCS-1)

QC Batch: 52293 Date Analyzed: 2008-09-11 Analyzed By: Prep Batch: 44826 QC Preparation: 2008-09-11 Prepared By:

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	LCS			Spike	Matrix		$\mathrm{Rec}.$
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec.	Limit
$\overline{\mathrm{GRO}}$	1.01	m mg/L	1	1.00	< 0.0229	101	75.6 - 116.1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$_{ m Spike}$	Matrix		Rec .		RPD
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec.	Limit	RPD	Limit
GRO	1.01	mg/L	1	1.00	< 0.0229	101	75.6 - 116.1	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	$\mathrm{Rec}.$
Surrogate	Result	Result	Units	Dil.	${f Amount}$	Rec.	Rec .	Limit
Trifluorotoluene (TFT)	0.0946	0.0986	$\mathrm{mg/L}$	1	0.100	95	99	76.5 - 118.1
4-Bromofluorobenzene (4-BFB)	0.0943	0.0995	$_{ m mg/L}$	1	0.100	94	100	74.7 - 117

Matrix Spike (MS-1) Spiked Sample: 170170

QC Batch: 51330 Date Analyzed: 2008-08-11 Analyzed By: MT Prep Batch: 44019 QC Preparation: 2008-08-11 Prepared By: MT

	MS			Spike	Matrix		$\mathrm{Rec}.$
Param	Result	Units	$\mathrm{Dil}.$	${ m Amount}$	Result	Rec .	Limit
GRO	0.853	$_{ m mg/L}$	1	1.00	< 0.0231	85	40.2 - 145

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		${ m Rec.}$		RPD
Param	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit	RPD	Limit
GRO	0.721	mg/L	1	1.00	< 0.0231	72	40.2 - 145	17	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	$\mathrm{Rec}.$
Surrogate	Result	Result	Units	$\mathrm{Dil}.$	${f Amount}$	$\mathrm{Rec}.$	$\mathrm{Rec}.$	Limit
Trifluorotoluene (TFT)	0.0931	0.0784	mg/L	1	0.1	93	78	48.6 - 135.8
4-Bromofluorobenzene (4-BFB)	0.0927	0.0767	mg/L	1	0.1	93	77	48 - 142.4

Matrix Spike (MS-1) Spiked Sample: 170843

QC Batch: 51490 Date Analyzed: 2008-08-15 Analyzed By: ER
Prep Batch: 44146 QC Preparation: 2008-08-15 Prepared By: ER

	MS			Spike	Matrix		Rec .
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec.	Limit
GRO	0.923	$_{ m mg/L}$	1	1.00	< 0.0231	92	40.2 - 145

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	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO	0.928	${ m mg/L}$	1	1.00	< 0.0231	93	40.2 - 145	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	$\mathrm{Rec}.$
Surrogate	Result	Result	Units	Dil.	${ m Amount}$	Rec .	Rec .	Limit
Trifluorotoluene (TFT)	0.0922	0.0914	m mg/L	1	0.1	92	91	48.6 - 135.8
4-Bromofluorobenzene (4-BFB)	0.0997	0.101	$\mathrm{mg/L}$	1	0.1	100	101	48 - 142.4

Matrix Spike (MS-1) Spiked Sample: 171303

QC Batch: 51709 Date Analyzed: 2008-08-22 Analyzed By: MT Prep Batch: 44336 QC Preparation: 2008-08-22 Prepared By: MT

	MS			Spike	Matrix		$\mathrm{Rec}.$
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec .	Limit
GRO	0.885	$_{ m mg/L}$	1	1.00	< 0.0229	88	57.7 - 128.7

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		$\mathrm{Rec.}$		RPD
Param	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit	RPD	Limit
GRO	0.823	mg/L	1	1.00	< 0.0229	82	57.7 - 128.7	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	${ m Rec.}$
Surrogate	Result	Result	Units	Dil.	${f Amount}$	Rec .	$\mathrm{Rec}.$	Limit
Trifluorotoluene (TFT)	0.0912	0.0825	m mg/L	1	0.1	91	82	63.2 - 128.1
4-Bromofluorobenzene (4-BFB)	0.0929	0.0834	$\mathrm{mg/L}$	1	0.1	93	83	63.6 - 128

Matrix Spike (MS-1) Spiked Sample: 171733

QC Batch: 51757 Date Analyzed: 2008-08-25 Analyzed By: MT Prep Batch: 44384 QC Preparation: 2008-08-25 Prepared By: MT

	MS			Spike	Matrix		$\mathrm{Rec}.$
Param	Result	Units	Dil.	${f Amount}$	Result	Rec .	Limit
$\overline{\mathrm{GRO}}$	0.700	$\mathrm{mg/L}$	1	1.00	< 0.0229	70	57.7 - 128.7

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		$\mathrm{Rec.}$		RPD
Param	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit	RPD	Limit
GRO	0.808	mg/L	1	1.00	< 0.0229	81	57.7 - 128.7	14	20

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	MS	MSD			Spike	MS	MSD	${ m Rec.}$
Surrogate	Result	Result	Units	Dil.	${f Amount}$	Rec .	Rec.	Limit
Trifluorotoluene (TFT)	0.0739	0.0852	m mg/L	1	0.1	74	85	63.2 - 128.1
4-Bromofluorobenzene (4-BFB)	0.0724	0.0862	mg/L	1	0.1	72	86	63.6 - 128

Matrix Spike (MS-1) Spiked Sample: 172139

QC Batch: 51916 Date Analyzed: 2008-08-29 Analyzed By: ER
Prep Batch: 44521 QC Preparation: 2008-08-29 Prepared By: ER

	MS			Spike	Matrix		$\mathrm{Rec}.$
Param	Result	Units	Dil.	${f Amount}$	Result	Rec .	Limit
GRO	0.976	$_{ m mg/L}$	1	1.00	0.0852	89	57.7 - 128.7

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec.	Limit	RPD	Limit
GRO	1.02	$\mathrm{mg/L}$	1	1.00	0.0852	93	57.7 - 128.7	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			$_{ m Spike}$	MS	MSD	$\mathrm{Rec}.$
Surrogate	Result	Result	Units	Dil.	${f Amount}$	Rec .	$\mathrm{Rec}.$	Limit
Trifluorotoluene (TFT)	0.103	0.106	$\mathrm{mg/L}$	1	0.1	103	106	63.2 - 128.1
4-Bromofluorobenzene (4-BFB)	0.0883	0.0865	$\mathrm{mg/L}$	1	0.1	88	86	63.6 - 128

Matrix Spike (MS-1) Spiked Sample: 172467

QC Batch: 52021 Date Analyzed: 2008-09-03 Analyzed By: ER
Prep Batch: 44599 QC Preparation: 2008-09-03 Prepared By: ER

	MS			Spike	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	${f Amount}$	Result	Rec .	Limit
GRO	5.81	mg/L	5	5.00	< 0.114	116	57.7 - 128.7

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			${ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit	RPD	Limit
GRO	6.10	mg/L	5	5.00	< 0.114	122	57.7 - 128.7	5	20

	MS	MSD			Spike	MS	MSD	$\mathrm{Rec}.$
Surrogate	Result	Result	Units	Dil.	${ m Amount}$	Rec.	$\mathrm{Rec}.$	Limit
Trifluorotoluene (TFT)	0.570	0.572	m mg/L	5	0.5	114	114	63.2 - 128.1
4-Bromofluorobenzene (4-BFB)	0.550	0.536	$_{ m mg/L}$	5	0.5	110	107	63.6 - 128

Report Date: October 7, 2008

Work Order: 8080828 HELSTF GROUNDWATER

65

Param

Matrix Spike (MS-1) Spiked Sample: 172638

QC Batch: 52076 Prep Batch: 44648 Date Analyzed: 2008-09-04 QC Preparation: 2008-09-04 Analyzed By: ER Prepared By: ER

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	MS			Spike	Matrix		$\mathrm{Rec}.$
Param	Result	Units	Dil.	${f Amount}$	Result	Rec .	Limit
GRO	0.883	$\mathrm{mg/L}$	1	1.00	0.0559	83	57.7 - 128.7

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec.	Limit	RPD	Limit
GRO	0.898	mg/L	1	1.00	0.0559	84	57.7 - 128.7	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	$\mathrm{Rec.}$
Surrogate	Result	Result	Units	Dil.	${f Amount}$	Rec .	Rec .	Limit
Trifluorotoluene (TFT)	0.0650	0.0817	m mg/L	1	0.1	65	82	63.2 - 128.1
4-Bromofluorobenzene (4-BFB)	0.0638	0.0768	m mg/L	1	0.1	64	77	63.6 - 128

Matrix Spike (MS-1) Spiked Sample: 172795

 QC Batch:
 52195
 Date Analyzed:
 2008-09-09

 Prep Batch:
 44755
 QC Preparation:
 2008-09-09

MS

Result

 Matrix
 Rec.

 Result
 Rec.
 Limit

 <0.0229</td>
 84
 57.7 - 128.7

Prepared By:

Analyzed By: MT

MT

GRO	0.838	$\mathrm{mg/L}$	1	1.00	< 0.0229
Percent recovery is based on the s	nike result RPI) is based o	n the spi	ke and snike	dunlicate result

Units

	MSD			Spike	Matrix		${ m Rec.}$		RPD
Param	Result	Units	Dil.	${f Amount}$	Result	Rec .	Limit	RPD	Limit
GRO	0.832	mg/L	1	1.00	< 0.0229	83	57.7 - 128.7	1	20

Dil.

Spike

Amount

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	$\mathrm{Rec.}$
$\mathbf{Surrogate}$	Result	Result	Units	Dil.	${ m Amount}$	Rec .	Rec.	Limit
Trifluorotoluene (TFT)	0.0761	0.0845	$\mathrm{mg/L}$	1	0.1	76	84	63.2 - 128.1
4-Bromofluorobenzene (4-BFB)	0.0821	0.0940	$_{ m mg/L}$	1	0.1	82	94	63.6 - 128

Matrix Spike (MS-1) Spiked Sample: 173041

QC Batch: 52293 Date Analyzed: 2008-09-11 Analyzed By: ER
Prep Batch: 44826 QC Preparation: 2008-09-11 Prepared By: ER

$\begin{array}{c} {\rm Work~Order:~8080828} \\ {\rm HELSTF~GROUNDWATER} \end{array}$

	MS			Spike	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	${ m Amount}$	Result	Rec .	Limit
GRO	4.92	mg/L	5	5.00	< 0.114	98	57.7 - 128.7

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			$_{ m Spike}$	Matrix		Rec .		RPD
Param	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit	RPD	Limit
GRO	5.13	$_{ m mg/L}$	5	5.00	< 0.114	103	57.7 - 128.7	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	$\mathrm{Rec.}$
Surrogate	Result	Result	Units	Dil.	${f Amount}$	Rec.	$\mathrm{Rec}.$	Limit
Trifluorotoluene (TFT)	0.546	0.579	$\mathrm{mg/L}$	5	0.5	109	116	63.2 - 128.1
4-Bromofluorobenzene (4-BFB)	0.561	0.560	$_{ m mg/L}$	5	0.5	112	112	63.6 - 128

Standard (ICV-1)

QC Batch: 51330

Date Analyzed: 2008-08-11

Analyzed By: MT

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			ICVs	${ m ICVs}$	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
GRO		m mg/L	1.00	0.970	97	85 - 115	2008-08-11

Standard (CCV-1)

QC Batch: 51330

Date Analyzed: 2008-08-11

Analyzed By: MT

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
GRO		$\mathrm{mg/L}$	1.00	0.998	100	85 - 115	2008-08-11

Standard (ICV-1)

QC Batch: 51490

Date Analyzed: 2008-08-15

Analyzed By: ER

			ICVs	ICVs	ICVs	$\operatorname{Percent}$	
			True	Found	$\operatorname{Percent}$	Recovery	Date
Param	Flag	Units	Conc .	Conc .	Recovery	Limits	${ m Analyzed}$
GRO		m mg/L	1.00	0.962	96	85 - 115	2008-08-15

Standard (CCV-1)

QC Batch: 51490

Date Analyzed: 2008-08-15

Analyzed By: ER

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			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO	riag	$\frac{\rm mg/L}$	1.00	0.906	91	85 - 115	2008-08-15
GIO		mg/L	1.00	0.900	91	69 - 119	2000-00-16
Standard	(ICV-1)						
QC Batch:	51709		Date An	alyzed: 2008-0	08-22	Anal	yzed By: MT
			ICVs	ICVs	${ m ICVs}$	Percent	
			True	Found	Percent	$\operatorname{Recovery}$	Date
Param	Flag	Units	Conc .	Conc .	Recovery	Limits	Analyzed
GRO		$\mathrm{mg/L}$	1.00	0.901	90	85 - 115	2008-08-22
G. 1 1	(00114)						
Standard	(CCV-1)						
QC Batch:	,		Date An	alyzed: 2008-0	08-22	${ m Anal}$	yzed By: MT
	,		Date An	alyzed: 2008-0	08-22 CCVs	Anal Percent	yzed By: MT
	,			Ū			yzed By: MT Date
QC Batch:	51709	Units	CCVs	CCVs	CCVs	Percent	·
	,	Units mg/L	CCVs True	CCVs Found	${ m CCVs} \ { m Percent}$	Percent Recovery	Date Analyzed
QC Batch:	51709 Flag		CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date
QC Batch: Param GRO	51709 Flag (ICV-1)		CCVs True Conc. 1.00	CCVs Found Conc.	CCVs Percent Recovery 95	Percent Recovery Limits 85 - 115	Date Analyzed
QC Batch: Param GRO Standard	51709 Flag (ICV-1)		CCVs True Conc. 1.00	CCVs Found Conc. 0.946	CCVs Percent Recovery 95	Percent Recovery Limits 85 - 115	Date Analyzed 2008-08-22
QC Batch: Param GRO Standard	51709 Flag (ICV-1)		CCVs True Conc. 1.00	CCVs Found Conc. 0.946	CCVs Percent Recovery 95	Percent Recovery Limits 85 - 115 Anal	Date Analyzed 2008-08-22
QC Batch: Param GRO Standard	51709 Flag (ICV-1)		CCVs True Conc. 1.00 Date An	CCVs Found Conc. 0.946 alyzed: 2008-0	CCVs Percent Recovery 95	Percent Recovery Limits 85 - 115 Anal	Date Analyzed 2008-08-22 yzed By: MT

Standard (CCV-1)

QC Batch: 51757 Date Analyzed: 2008-08-25 Analyzed By: MT

			CCVs	CCVs	$\mathrm{CC}\mathrm{Vs}$	$\operatorname{Percent}$	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	$\operatorname{Conc.}$	Conc .	Recovery	Limits	Analyzed
GRO		m mg/L	1.00	0.903	90	85 - 115	2008-08-25

Standard (ICV-1)

QC Batch: 51916 Date Analyzed: 2008-08-29 Analyzed By: ER

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			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	${ m Analyzed}$
GRO		mg/L	1.00	0.896	90	85 - 115	2008-08-29

Standard (CCV-1)

QC Batch: 51916 Date Analyzed: 2008-08-29 Analyzed By: ER

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	$\operatorname{Conc.}$	Conc .	Recovery	Limits	Analyzed
GRO		$\mathrm{mg/L}$	1.00	0.920	92	85 - 115	2008-08-29

Standard (ICV-1)

QC Batch: 52021 Date Analyzed: 2008-09-03 Analyzed By: ER

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc .	Conc .	$\operatorname{Recovery}$	Limits	${ m Analyzed}$
GRO		$_{ m mg/L}$	1.00	1.09	109	85 - 115	2008-09-03

Standard (CCV-1)

QC Batch: 52021 Date Analyzed: 2008-09-03 Analyzed By: ER

			CCVs	CCVs	CCVs	$\operatorname{Percent}$	
			True	Found	$\operatorname{Percent}$	Recovery	Date
Param	Flag	Units	$\operatorname{Conc.}$	$\operatorname{Conc.}$	Recovery	Limits	Analyzed
GRO		m mg/L	1.00	1.06	106	85 - 115	2008-09-03

Standard (ICV-1)

QC Batch: 52076 Date Analyzed: 2008-09-04 Analyzed By: ER

			1 CVs	$1 \mathrm{CVs}$	$1 \mathrm{CVs}$	Percent	
			True	Found	$\operatorname{Percent}$	Recovery	Date
Param	Flag	Units	Conc .	$\operatorname{Conc.}$	Recovery	Limits	Analyzed
GRO		m mg/L	1.00	0.895	90	85 - 115	2008-09-04

Standard (CCV-1)

QC Batch: 52076 Date Analyzed: 2008-09-04 Analyzed By: ER

QC Batch: 52293

Flag

Units

mg/L

Param

GRO

$\begin{array}{c} {\rm Work~Order:~8080828} \\ {\rm HELSTF~GROUNDWATER} \end{array}$

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Analyzed By: ER

Date

Analyzed

2008-09-11

Percent

Recovery

Limits

85 - 115

			CCVs	CCVs	CCVs	D		
			True	Found	Percent	Percent	Date	
Danam	Elem	Units	Conc.	Conc.		$egin{array}{c} { m Recovery} \\ { m Limits} \end{array}$		
Param	Flag			0.893	Recovery	85 - 115	Analyzed 2008-09-04	
GRO		m mg/L	1.00	0.893	89	89 - 119	2008-09-04	
Standard	(ICV-1)							
QC Batch: 52	52195		Date Analyzed: 2008-09-09				Analyzed By: MT	
			ICVs	ICVs	${ m ICVs}$	Percent		
			True	Found	$\operatorname{Percent}$	Recovery	Date	
Param	Flag	Units	Conc .	Conc .	$\operatorname{Recovery}$	Limits	Analyzed	
GRO		m mg/L	1.00	0.892	89	85 - 115	2008-09-09	
Standard	,		D	-ll. 2002 (00.00	Anal	wood Dow MT	
QC Batch:	52195		Date An	alyzed: 2008-0	19-09	Allal	yzed By: MT	
QC Batch:	52195			-			yzed by: M1	
QC Batch:	52195		CCVs	CCVs	CCVs	Percent		
		Units	CCVs True	${ m CCVs} \ { m Found}$	${ m CCVs} \ { m Percent}$	Percent Recovery	Date	
Param	52195 Flag	$\begin{array}{c} \text{Units} \\ \text{mg/L} \end{array}$	CCVs	CCVs	CCVs	Percent		
Param GRO	Flag		CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	
Param GRO Standard	Flag (ICV-1)		CCVs True Conc. 1.00	CCVs Found Conc.	CCVs Percent Recovery 89	Percent Recovery Limits 85 - 115	Date Analyzed	
Param GRO Standard	Flag (ICV-1)		CCVs True Conc. 1.00	CCVs Found Conc. 0.890	CCVs Percent Recovery 89	Percent Recovery Limits 85 - 115	Date Analyzed 2008-09-09	
Param GRO Standard	Flag (ICV-1)		CCVs True Conc. 1.00	CCVs Found Conc. 0.890	CCVs Percent Recovery 89	Percent Recovery Limits 85 - 115 Ana Percent	Date Analyzed 2008-09-09	
QC Batch: Param GRO Standard QC Batch:	Flag (ICV-1)		CCVs True Conc. 1.00 Date Ar	CCVs Found Conc. 0.890 nalyzed: 2008-0	CCVs Percent Recovery 89 09-11 ICVs	Percent Recovery Limits 85 - 115	Date Analyzed 2008-09-0	

Date Analyzed: 2008-09-11

 CCVs

Found

Conc.

1.15

 CCVs

True

Conc.

1.00

CCVs

Percent

Recovery

115